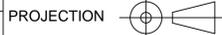


DO NOT SCALE!



IF IN DOUBT, ASK

| | | | |
|--|--|--------------------------------|--|
| DESCRIPTION | Tank T83237 is used as a buffer for the holding of demineralised cooling water in the PTFE destruction demonstration facility. | | |
| EQUIPMENT LOCATION | Outside laboratory 131, Building V-H2 | | |
| PLANT LOCATION | Necsa, Pelindaba, North-West Province | | |
| SAFETY CLASSIFICATION | Non-classified (N) and SC-3(C) | | |
| QUALITY CLASSIFICATION | Non-classified (N) and QC-3(C) | | |
| FLUID PROPERTIES | | | |
| FLUID | Demineralised Water | | |
| FLUID STATE | Liquid | SOLIDS CONTENT | ≤ 1200 mg/L total dissolved solids [6] |
| MASS FLOW RATE IN/OUT (kg/h) | 16129 [1] | | |
| DENSITY (kg/m³) | 995.67 at 30 °C [5] | | |
| VISCOSITY (cP) | 0.7 at 30 °C [3] | | |
| THERMAL CONDUCTIVITY (W/m.K) | 0.615 at 30 °C [5] | | |
| SPECIFIC HEAT CAPACITY (kJ/kgK) | 4.18 at 30 °C [5] | | |
| CORROSIVE DUE TO | N/A | | |
| MASS EMPTY (kg) | Supplier to advise | CORROSION ALLOWANCE (") | 0.00 |
| CAPACITY OF VESSEL (L) | 1500 | VOLUME OF FLUID (L) | - |
| PRESSURE (kPa (g)) | | TEMPERATURE (°C) | |
| DESIGN | 1585 | DESIGN | 93 |
| OPERATING | 0 | OPERATING | 30 - 40 °C |
| MINIMUM | 0 | MINIMUM | -2.6 °C |
| TEST | Supplier to Advise | TEST | Supplier to Advise |
| TYPE OF PRESSURE TEST | HYDROSTATIC | Yes | PNEUMATIC N/A |
| DESIGN CODE | ASME B31.3-2022, ISO 9001 | | |
| SPECIFICATION | N/A | | |
| LAGGING | N/A | | |
| TANK HEIGHT (m) | 1.97 [4] | | |
| TANK DIAMETER (m) | 0.98 [4] | | |
| No. of LEG SUPPORTS | 3 | | |

| | | | |
|--|-----|---|-----|
| AGITATOR REQUIREMENTS | | COOLING/HEATING REQUIREMENTS | |
| AGITATOR REQUIRED | N | COOLING/HEATING REQUIRED | N |
| AGITATOR SPECIFICATIONS / DATASHEET NO. | N/A | COOLING/HEATING SPECIFICATIONS / DATASHEET NO. | N/A |

NOTES AND REFERENCES

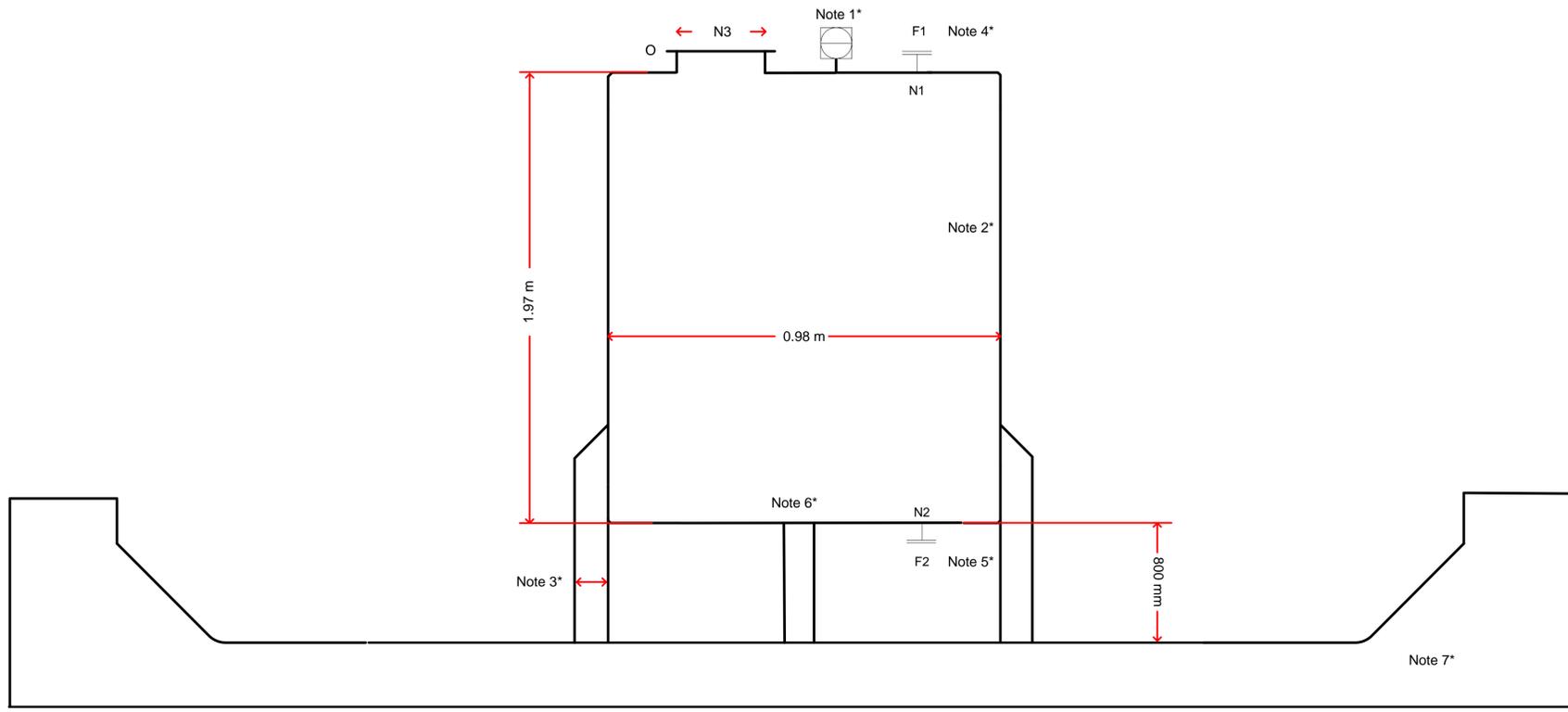
[1] ENS-FDP-CLC-24015: Energy Balance Calculation for the PTFE Filter Destruction System
 [2] ENS-FDP-REP-24006: Equipment Sizing: Demineralised Cooling Water Tank T83237
 [3] ENS-FDP-REP-24034: Centrifugal Pumps Sizing Report for FDP Demonstration Facility
 [4] ENS-FDP-REP-24006: Equipment Sizing: Demineralised Water Tank (T83227)
 [5] ENS-FDP-FDM-24001: Process Flow Diagram Filter Destruction Project
 [6] Rand Water Supply to Tshwane municipality: 1 Month Water Quality Report

| | | | |
|-----------------|--|------------------|--|
| MATERIAL | | | |
| SHELL | FLANGES | HEADS | PIPE NOZZLES |
| SS 304L | SS, ASTM A182-F304/304L, ASME B16.5 | Stainless steel | SS, ASTM A182-F304/304L |
| SUPPORTS | GASKETS | UTILITIES | BOLTS |
| Stainless steel | 1/16" thick flexible graphite w/304 SS | N/A | ASTM A193, Gr B7 stud, w/2 heavy hex nuts ASTM A194, Gr 2H |

| | | | |
|------------------------|-----------|--|---|
| NOZZLE SCHEDULE | | | |
| MARK | NB | RATING AND FACING | DESCRIPTION |
| N1 | 15 | Weld Neck Flange, RF, Class Rating 150 | Demineralised Cooling Water Inlet Nozzle |
| N2 | 50 | Weld Neck Flange, RF, Class Rating 150 | Demineralised Cooling Water Outlet Nozzle |
| N3 | - | Supplier to Advise | Loose fitting lid for easy maintainability. |

| | |
|--------------|--|
| OTHER | |
| MARK | DESCRIPTION |
| Note 1 | An additional port will have to be created for the insertion of an ultrasonic level indicator at this location. |
| Note 2 | The wall thickness will be specified on advise from the supplier. |
| Note 3 | Leg support details will be specified on advice from the supplier. This includes the distances between each of the supports. |
| Note 4 | Flange sizes specified based on SS, ASTM A182-F304/304L, ASME B16.5. |
| Note 5 | Flange sizes specified based on SS, ASTM A182-F304/304L, ASME B16.5. |
| Note 6 | T83237 is designed for construction as a cylindrical, flat-bottomed tank. |
| Note 7 | T83237 will be located in a banded area, the design of which shall be according to the relevant civil engineering standards. |
| F | All process lines marked "F" shall be flanged for easy maintainability. |
| O | Loose fitting lid for easy maintainability. |

| | | | |
|--------------------------------------|---|--------------------------------|---|
| NON DESTRUCTIVE TESTING (NDT) | | FABRICATION | |
| DYE-PENETRANT | N | CHEMICAL CLEANING | Y |
| HALIED | N | HEAT TREATMENT | N |
| MAGNETIC PARTICLE TESTING | Y | HELIUM LEAK TESTING | N |
| ULTRA-SONIC | Y | ALLOWABLE LEAK RATE | N |
| HARDNESS TESTING | N | SURFACE FINISH INTERNAL | N |
| X-RAY | N | MATERIAL CERTIFICATES | Y |
| QUALITY CONTROL BLOCK | N | VESSEL TO BE DRIED | N |



| APPROVAL | | | | |
|----------|---------------------------|--------------|-----------|------|
| | DISCIPLINE | NAME | SIGNATURE | DATE |
| Prepared | Process Engineer | MK Nkadameng | | |
| Checked | Process Engineer | ND Mokoena | | |
| Checked | Senior Process Engineer | BM Khumalo | | |
| Checked | Mechanical Engineer | M. Msane | | |
| Checked | Chief Mechanical Engineer | S. Mngoma | | |
| Checked | Chief C&I Engineer | G. Manuel | | |
| Approved | Chief Process Engineer | K. Moodley | | |

| REVISION HISTORY | | | |
|------------------|--------------|------------------|----------|
| Revision | Description | By | Date |
| 1 | First Issue. | Mmotle Nkadameng | 10-09-24 |
| | | | |
| | | | |
| | | | |



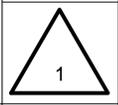
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PTFE Filter Destruction Project

Primary Cooling Water Tank Specification Sheet

Document No. ENS-FDP-SPE-24015

DESTROY ALL PREVIOUS PRINTS



Revision